

REMARKS

Upon entry of the present Response, claims 26, 27, 29-31, 33-35 and 37 will remain pending in the application. Claims 26, 29-31, 33-35 and 37 will be amended, and claims 28, 32 and 36 will be canceled. Entry of the present Response, reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

As an initial matter, Applicants would like to thank the Examiner for the interview held with Applicants' U.S. representative on October 4, 2005. Applicants also thank the Examiner for considering all of the documents cited in the Information Disclosure Statement filed on December 8, 2004.

During the interview, the Examiner explained that it is his opinion that Applicants' claimed "search range focusing section" (recited in independent claims 26 and 30) is read on by Laumeyer et al. (U.S. Patent No. 6,266,442), which discloses in col. 9, lines 49-64, for example, that imaging means 10 are tuned to capture preselected portions of a scene of interest, and are tuned so that all frame data not related to images of potential objects are filtered.

During the interview, Applicants' U.S. representative argued that the combination of Laumeyer and Norimasa (Japanese Patent Publication No. 11-78692) does not teach "a plurality of databases that are each associated with one of the plurality of cameras and that each have registered therein a plurality of model data", as recited in Applicants' independent claims 26 and 30. The Examiner countered that Laumeyer discloses a database that includes model data, and Norimasa teaches associating a plurality of databases with a plurality of cameras. The Examiner also stated that he believes that

the motivation asserted in the Final Office Action for combining the references is sufficient to support the rejection.

Applicants' U.S. representative also argued that Laumeyer does not disclose that the databases are associated with conditions, or that an object recognition system selects between the databases depending on the conditions, as recited in dependent claims 28, 29, 32, 33, 36 and 37. The Examiner asserted that this aspect of the invention would need to be more clearly defined in the claims in order to distinguish the claimed invention from Laumeyer on this basis.

In the Office Action, the Examiner rejected claims 29, 31, 33, 35 and 37 under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner stated that the terminology "model image data", recited in claims 31 and 35, is unclear, since it is unclear whether "model image data" refers to the "image data" recited in claims 30 and 34, or the "model object data" recited in claims 30 and 34.

Applicants have used the terminology "model image data" to refer to image data which is used to create feature vector databases, as described, for example, on page 23, line 16 to page 24, line 21 of the specification. Applicants have used the terminology "model image data" to distinguish this data from "image data" which corresponds to an object to be recognized, as described, for example, on page 24, line 22 to page 25, line 10 of the specification. Further "model image data" is distinguished from "model object data", in that "model object data" is data that is calculated based on "model image data", and which is stored in a database. Based on the above, Applicants respectfully submit that the terminology "model image data" is not unclear, and

respectfully request withdrawal of this ground of rejection.

With respect to dependent claims 29, 33 and 37, the Examiner asserted that the “conditions” recited in these claims are not “predetermined”, as recited in intervening claims 32 and 36. Applicants have canceled claims 32 and 36, and submit that the claims no longer recite the term “predetermined”. Thus, Applicants respectfully request that the Examiner withdraw this ground of rejection.

In the Office Action, the Examiner also rejected claims 26, 28-30, 32-34, 36 and 37 under 35 U.S.C. §103(a) as being unpatentable over Laumeyer et al. in view of Norimasa. Applicants respectfully traverse the rejection for at least the following reasons.

In the specification of the present application, Applicants disclose an object recognition apparatus which includes, inter alia, a plurality of cameras that obtain image data of an object, and a plurality of databases. A plurality of model data concerning object models is registered in each of the databases. In one disclosed embodiment, each of the databases is associated with one of the cameras, and a condition (or combination of conditions) of the environment. The object recognition apparatus also includes an object recognition section that compares image data with model data in a selected database. In one disclosed embodiment, the object recognition section selects one of the databases based on a camera corresponding to the image data and a detected condition or combination of conditions of the environment. As Applicants disclose in pages 32-34 of the specification, the apparatus described above serves to significantly improve the accuracy of object recognition.

Laumeyer is directed towards an apparatus for identifying objects depicted in a

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videostream. Laumeyer discloses that a database of road signs is built by processing video image frame data. See col. 3, lines 14-17. In the Office Action, the Examiner acknowledges that Laumeyer's apparatus does not include a plurality of databases which are each associated with one of a plurality of cameras. However, the Examiner asserts that Norimasa teaches this feature and argues that it would have been obvious to modify Laumeyer in view of Norimasa to include a plurality of databases which are each associated with one of a plurality of cameras. Applicants respectfully disagree.

Section 706.02(II) of the M.P.E.P. provides that "[c]itation of and reliance upon an abstract without citation of and reliance upon the underlying scientific document is generally inappropriate where both the abstract and the underlying document are prior art." One of the rationales for this, explained in section 706.02(II), is that a full-text document may "include teachings away from the invention that will preclude an obviousness rejection under 35 U.S.C. 103, when the abstract alone appears to support the rejection." Section 706.02(II) further provides that "[w]hen both the abstract and the underlying document qualify as prior art, the underlying document should normally be used to support a rejection. In limited circumstances, it may be appropriate for the examiner to make a rejection in a non-final Office action based in whole or in part on the abstract only without relying on the full text document."

In the Final Office Action, the Examiner relies only on an English language abstract of Norimasa to support the 35 U.S.C. §103(a) rejection. Applicants respectfully submit that, under section 706.02(II) of the M.P.E.P., reliance on the abstract of Norimasa is improper. Applicants also submit that, under section 706.02(II), it is improper for the Examiner to make the rejection final, as the rejection is based on only

the abstract without relying on the full text document. Applicants respectfully submit that the rejection is improper for at least the following reasons as well.

The abstract of Norimasa discloses a plurality of cameras 3-1 through 3-8 which photograph a plurality of images, which are stored in image memories 7-1 through 7-8 to serve for preparing a plurality of images. Applicants respectfully submit that the abstract of Norimasa does not disclose that the image memories 7-1 through 7-8 store databases in which model data is registered, as taught in Applicants' present application.

In the Office Action, the Examiner asserts that it would have been obvious to divide Laumeyer's database into smaller, individual databases to be associated with each camera, as taught by Norimasa, in order to allow for the memories to be physically closer to the cameras, to allow for a simpler control software system (in that the images themselves would not have to contain complex header files associating themselves with a camera), and to make for a modular system with better organization to data storage. However, the abstract of Norimasa does not explicitly recite any of these asserted advantages of Norimasa's system, and Applicants respectfully submit that these are not inherent advantages obvious to one of ordinary skill in the art.

Applicants further submit that the combination of Laumeyer and Norimasa does not teach associating a database with a condition or a combination of conditions of an environment, nor do these references teach selecting a database based on a detected condition, and comparing image data with model data in the selected database.

In the Office Action, the Examiner asserts that Laumeyer discloses an object recognition device that selects a database based on a direction of an object with respect

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to a camera, citing col. 17, lines 3-16 for support. However, Applicants respectfully submit that this section of Laumeyer merely discloses that a videostream containing a series of signs is subjected to processing equipment that rapidly applies extraction routines, and that road signs benefit from a simple set of rules regarding location, color, size, etc.

The Examiner asserts that this section of Laumeyer teaches that images taken by cameras are selected for saving if an orientation condition is met. However, Applicants submit that selecting an image for saving is not the same as associating a plurality of databases with a condition or combination of conditions, and selecting a database based upon the occurrence of a detected condition or combination of conditions. Further, Applicants submit that an orientation condition of an image of a sign is not a "condition of an environment" as recited in Applicants' claims.

Thus, Applicants respectfully submit that the combination of Laumeyer and Norimasa fails to disclose or suggest an object recognition apparatus which includes a plurality of databases in which model data concerning object models is registered, where each of the databases is associated with one of a plurality of cameras and a condition or combination of conditions of an environment, and an object recognition section that selects one of the databases based on a camera corresponding to image data and a detected condition or combination of conditions of the environment, as recited in independent claims 26 and 30.

Applicants submit that the combination of Laumeyer and Norimasa also fails to disclose or suggest a method for recognizing an object which includes selecting a database from a plurality of databases based on a camera that generated image data

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and a detected condition or combination of conditions of an environment, where each of the databases are associated with one of a plurality of cameras and a condition or combination of conditions of the environment, and comparing image data to model object data stored in the selected database, as recited in independent claim 34.

For at least the reasons stated above, Applicants respectfully submit that the 35 U.S.C. § 103(a) rejection of independent claims 26, 30 and 34 is improper, and respectfully request withdrawal of this ground of rejection.

Dependent claims 29, 33 and 37 are also submitted to be in condition for allowance for at least the reasons set forth above with respect to independent claims 26, 30 and 34.

Claims 28, 32 and 36 have been canceled, as their subject matter has been incorporated into independent claims 26, 30 and 34, respectively.

In the Office Action, the Examiner rejected claims 27, 31 and 35 under 35 U.S.C. § 103(a) as being unpatentable over Laumeyer in view of Norimasa, and further in view of Gotsmann et al. (U.S. Patent No. 6,501,857). Applicants respectfully traverse the rejection for at least the following reasons.

Applicants respectfully submit that Gotsmann fails to overcome the deficiencies of Laumeyer and Norimasa. That is, Applicants respectfully submit that the combination of Laumeyer, Norimasa and Gotsmann fails to disclose or suggest an object recognition apparatus which includes a plurality of databases in which model data concerning object models is registered, where each of the databases is associated with one of a plurality of cameras and a condition or combination of conditions of an environment, and an object recognition section that selects one of the databases based on a camera

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corresponding to image data and a detected condition or combination of conditions of the environment, as recited in independent claims 26 and 30.

Applicants submit that the combination of Laumeyer, Norimasa and Gotsmann also fails to disclose or suggest a method for recognizing an object which includes selecting a database from a plurality of databases based on a camera that generated image data and a detected condition or combination of conditions of an environment, where each of the databases are associated with one of a plurality of cameras and a condition or combination of conditions of the environment, and comparing image data to model object data stored in the selected database, as recited in independent claim 34.

Based on the above, it is respectfully submitted that this application is now in condition for allowance, and a Notice of Allowance is respectfully requested.

#### SUMMARY AND CONCLUSION

Applicants recognize that the current status of the application is after-Final. However, Applicants respectfully submit that entry of the present amendment is proper under the current circumstances, since due to the inappropriateness of the rejections as stated above, the finality of the Office Action is improper. Applicants further submit that the present amendment does not raise new issues requiring further search and/or consideration.

Entry and consideration of the present amendment, reconsideration of the outstanding Office Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and



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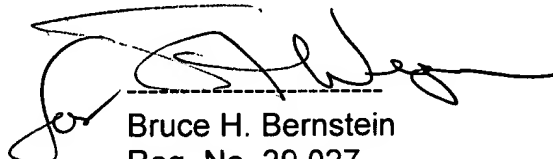
believe that they have now done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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